

REMARKS

Claims 1, 21, 23, 26 and 29 have been amended. Claims 1, 2, 4, 6 and 21 to 33 are retained of which claim 23 has been allowed.

Allowed claim 23 has been amended to correct a typographical error.

Claims 1, 2, 4, 6, 21, 22 and 24 to 33 were rejected under 35 U.S.C. 112, first and second paragraphs, as being indefinite because the meaning of “steppable wirefilm means” was not understood and because this phrase is not described in the specification as filed in such a way as to reasonably convey to one skilled in the relevant art that the invention(s), at the time the application was filed, had possession of the claimed invention. As previously stated, the rejection is without merit since the term “steppable” has been used in the art in connection with the movement of leadframe strips for decades. However, since that term is not expressly used in the specification, it has changed to “discontinuously movable” which means the same as --stoppable--.

It is well known in the art that leadframe strips are moved to an operation station where the movement stops and the operation takes place on one of the leadframes. Thereafter, the leadframe strip is moved along until the next leadframe of the leadframe strip is at the operation station and stops at the operation station for some purpose. This action is referred to as “stepping” and is a discontinuous movement as opposed to a continuous movement where the movement of the leadframe strip never ceases. Such activity is clearly set forth in the specification and would be implied to anyone with a modicum of skill in the art even were it not set forth.

The specification very clearly states at page 9, lines 23ff that “system 30 advances leadframe 40 *periodically* in a direction indicated by arrow 46”. Leadframe 40 is stated

to be “a substantially continuous roll, film, sheet, strip, or other construction,. Since leadframe 40 is substantially continuous, system 30 is able to advance leadframe 40...” It follows that the leadframe 40 is a “stepable discontinuously movable wirefilm means” since “periodic”, “stepable” and “discontinuously movable” are synonymous in the involved art.

Other portions of the specification which are apropos to this issue are found at page 8, line 26ff where the movement is analogized to a motion picture film which, as is well known, moves in steps. The paragraph bridging pages 13 and 14, it is clearly stated that the film advances after processing at the film attach station. This is a discontinuous activity. The first paragraph on page 15 states “[a]s shown in FIGURE 5d, film attach tool 62 has returned to its original upward position and push tools 64 have retracted out of openings 65 to allow film tape carrier 32 to advance another wirefilm 20 into position at film attach station 50”. It follows that the film tape carrier was not advancing until the tool 62 had returned to its original upward position, this being a stoppable or discontinuously movable operation.

It should be noted that the present invention relates to a wirefilm which requires a discontinuously movable or stepable, substantially planar film carrying the wirefilm whereby the substantially planar film can be advanced and the wire strands thereon coupled with an advanceable leadframe and device combination with bond sites thereon either concurrently or simultaneously. No such system is contemplated by any of the cited references. Accordingly, the arguments previously presented are repeated as follows:

Claims 1, 2 and 26 were rejected under 35 U.S.C. 102(b) as being anticipated by Laakso et al. (U.S. 4,650,545). The rejection is respectfully traversed.

Claim 1 requires, among other features, a discontinuously movable substantially planar film. No such feature is taught or suggested by Laakso et al.

Claim 1 further requires a plurality of spaced apart groups of wire strands, each wire strand of each group of wire strands having a first end and a second end, each wire strand of one of the groups of wire strands coupled to the film corresponding to the relative positions of the first component and the second component, the first end of each wire strand of the one of the groups of wire strands operable to contact a first bonding site and the second end of each wire strand of the one of the groups of wire strands operable to contact a second bonding site to electrically interconnect the first component and the second component, at least a portion of each wire strand between the first end and the second end being fully embedded in said film. No such feature is taught or suggested by Laakso et al. either alone or in the combination as claimed. It should be noted that the process of Laakso et al. is incapable of fully embedding the conductors in the polyimide layer 14 whereas this feature is fully contemplated by the subject disclosure in the paragraph bridging pages 7 and 8.

Claim 2 depends from claim 1 and therefore defines patentably over Laakso et al. for at least the reasons set forth above with reference to claim 1.

In addition, claim 2 further limits claim 1 by requiring that the film comprise a plastic polymer. No such combination is taught or suggested by Laakso et al.

Claim 26 requires, among other features, a continuously movable wirefilm for electrically interconnecting bonding sites of said first component and said second component sites. No such feature is taught or suggested by Laakso et al.

Claim 26 further requires a plurality of spaced apart groups of wire strands, each wire strand of each group of wire strands having a first end and a second end, each wire strand of one of the groups of wire strands coupled to the film corresponding to the relative positions of the first component and the second component, the first end of each wire strand of each group of wire strands operable to contact a first bonding site and the second end of each wire strand of the one of the groups of wire strands operable to contact a second bonding site to electrically interconnect the first component and the second component, at least a portion of each wire strand between the first end and the second end being embedded in said film. No such feature is taught or suggested by Laakso et al. either alone or in the combination as claimed. It should be noted that the process of Laakso et al. is incapable of fully embedding the conductors in the polyimide layer 14 whereas this feature is fully contemplated by the subject disclosure in the paragraph bridging pages 7 and 8.

Claims 21, 22, 29 and 30 were rejected under 35 U.S.C. 102(b) as being anticipated by Yamasaki et al. (U.S. 5,554,885). The rejection is respectfully traversed.

Claim 21 requires, among other features, a continuously movable substantially planar film. No such structure is taught or suggested by Yamasaki et al.

Claim 21 further requires a plurality of spaced apart groups of wire strands, each wire strand of each group of wire strands having a first end and a second end, each wire strand of one of the groups of wire strands coupled to the film corresponding to the

relative positions of the first component and the second component, the first end of each wire strand of each group of wire strands operable to contact a first bonding site and the second end of each wire strand of the one of the groups of wire strands operable to contact a second bonding site to electrically interconnect the first component and the second component, each wire strand comprising a loop portion relaxed and located entirely between the first end and the second end, the loop portion spaced apart from said film. No such structure is taught or suggested by Yamasaki et al. Note that the resin 50 is an encapsulant. Accordingly, there is no stepable film in Yamasaki et al. and, it follows, there can be no loop portion spaced apart from the film.

Claim 22 depends from claim 21 and therefore defines patentably over Yamasaki et al. for at least the reasons presented above with respect to claim 21.

In addition, claim 22 further limits claim 21 by requiring that the film comprise a plastic polymer. No such combination is taught or suggested by Yamasaki et al.

Claim 29 requires, among other features, a continuously movable substantially planar film. No such structure is taught or suggested by Yamasaki et al.

Claim 29 further requires a plurality of spaced apart groups of wire strands, each wire strand of each group of wire strands having a first end and a second end, each wire strand of one of the groups of wire strands coupled to the film corresponding to the relative positions of the first component and the second component, the first end of each wire strand of the one of the groups of wire strands operable to contact a first bonding site and the second end of each wire strand of the one of the groups of wire strands operable to contact a second bonding site to electrically interconnect the first component and the second component, each wire strand comprising a loop portion relaxed and

located entirely between the first end and the second end, the loop portion spaced apart from film. No such structure is taught or suggested by Yamasaki et al. Note that the resin 50 is an encapsulant. Accordingly, there is no stepable film in Yamasaki et al. and, it follows, there can be no loop portion spaced apart from the film.

Claim 30 depends from claim 29 and therefore defines patentably over Yamasaki et al. for at least the reasons presented above with reference to claim 29.

In addition, claim 30 further limits claim 29 by requiring that the film comprise a plastic polymer. No such combination is taught or suggested by Yamasaki et al.

Claims 4 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al. in view of Nakano et al. The rejection is respectfully traversed.

Claim 4 depends from claim 1 and claim 27 depends from claim 26. Since Nakano et al. fails to overcome the deficiencies noted above with reference to claims 1 and 26, these claims define over the combination of references for that reason alone, even assuming *arguendo* that the combination be proper.

Claims 4 and 27 further limit claims 1 and 26 by requiring an adhesive layer operable to couple the wirefilm to the first component and the second component. No such combination is taught or suggested by Laakso et al., Nakano et al. or any proper combination of these references. It should be noted that this is not a bonding step, but rather an adhesive step to maintain proper orientation of the wire strands prior to bonding as discussed in the specification at page 10, lines 29ff.

Claims 24 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki et al. in view of Nakano et al. The rejection is respectfully traversed.

Claim 24 depends from claim 21 and claim 32 depends from claim 29. Since Nakano et al. fails to overcome the deficiencies noted above with reference to claims 21 and 29, these claims define over the combination of references for that reason alone, even assuming *arguendo* that the combination be proper.

Claims 24 and 32 further limit claims 21 and 29 by requiring an adhesive layer operable to couple the wirefilm to the first component and the second component. No such combination is taught or suggested by Yamasaki et al., Nakano et al. or any proper combination of these references. It should be noted that this is not a bonding step, but rather an adhesive step to maintain proper orientation of the wire strands prior to bonding as discussed in the specification at page 10, lines 29ff.

Claims 6 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al. in view of Ettre et al. (U.S. 3,655,496). The rejection is respectfully traversed.

Claim 6 depends from claim 1 and claim 28 depends from claim 26. Since Ettre et al. fails to overcome the deficiencies noted above with reference to claims 6 and 28, these claims define over the combination of references for that reason alone, even assuming *arguendo* that the combination be proper.

Claims 6 and 28 further limit claim 1 and 26 by requiring a film tape carrier removably coupled to the film, the film tape carrier operable to advance the film from a first position to a second position. No such combination is taught or suggested by Laakso et al, Ettre et al. or any proper combination of these references.

Claims 25 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki et al. in view of Ettre et al. The rejection is respectfully traversed.

Claim 25 depends from claim 21 and claim 33 depends from claim 29. Since Ettre et al. fails to overcome the deficiencies noted above with reference to claims 21 and 29, these claims define over the combination of references for that reason alone, even assuming arguendo that the combination be proper.

In view of the above remarks and amendment, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jay M. Cantor', with a stylized flourish at the end.

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